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HAROLD B. WILLE

In the Supreme Court
OF THE
United States

OCTOBER TERM, 1953

No. 425

OLIVER UNITED FILTERS INCORPORATED,
Petitioner,

vs.

HAROLD F. SILVER (an individual),
Respondent.

PETITION FOR WRIT OF CERTIORARI
to the United States Court of Appeals
for the Tenth Circuit
AND
BRIEF IN SUPPORT THEREOF.

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No.

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PETITION FOR WRIT OF CERTIORARI
to the United States Court of Appeals for the Tenth Circuit.

To the Honorable Earl Warren, Chief Justice of the United States, and to the Honorable Associate Justices of the Supreme Court of the United States:

Petitioner prays that a writ of certiorari issue to the United States Court of Appeals for the Tenth Circuit to review the judgment entered by said Court on July 23, 1953 in Cause No. 4574 on the docket of said Court wherein petitioner was the appellant.

This judgment relates to United States Letters Patent Nos. 2,390,131 (Tab 11, Silver Exhibit A) and 2,468,720 (Tab 12, Silver Exhibit B), both issued to Harold F. Silver for a process and machine for diffusing sugar from sugar beets.

The judgment below was entered (Tr. 370) upon an appeal taken by petitioner from the judgment of the District Court of the United States for the District of Colorado.

The action was originally instituted by petitioner, Oliver United Filters Incorporated, under the Declaratory Judgments Act to test the questions of infringement and validity of the Silver Patent No. 2,390,181 (Tab 11, Silver Exhibit A) and respondent, Harold F. Silver, filed a counterclaim charging petitioner with infringement of said patent. In addition, respondent filed a supplemental counterclaim charging petitioner, because of the same acts by Oliver, with the infringement of the then recently issued Silver Patent No. 2,468,720 (Tab 12, Silver Exhibit B).

The District Court, 93 USPQ 87, 91, 92 (Tr. 34 and 35):

1. Held valid all of the claims of both Silver patents. The Court of Appeals (Tr. 370) *affirmed* this decision.

2. Held infringed claims 1, 2, 4, 6, 8, 11, 12 and 13 of the Silver Patent No. 2,390,131. The Court of Appeals *affirmed.*

3. Held infringed claims 2, 3, 4 and 6 of the Silver Patent No. 2,468,720. The Court of Appeals *affirmed.*

JURISDICTION.

This Court has jurisdiction to review the judgment in question under Section 28 U. S. C. 1254 (1).

The judgment below was entered July 23, 1953 (Tr. 370).

MATTER INVOLVED.

The nature of the processes and apparatus forming the subject matter of the suit.

This suit concerns a process and apparatus for extracting sugar solution from sugar beets. Both patents in suit disclose almost identically the same process and apparatus, differing only in minute details, as will be discussed further on in this petition. The following discussion of the subject matter of these patents is, therefore, applicable to the disclosures of both such patents. Both patents relate to the extraction of sugar from sugar beets by diffusion and that is the nature, of course, of the process and apparatus of Oliver charged to infringe the claims of such patents.

Broadly speaking, the process of extracting sugar from sugar beets by diffusion here involved has been admittedly known for many decades (Tr. 190-191) and, as will be discussed briefly in the following, is the diffusion process practiced in Robert's Battery, which, admittedly, has been the battery used in practically all sugar beet plants for many, many years. The following discussion of the general nature of the process of extracting sugar from sugar beets applies to Robert's Battery, the process of the patents in suit, the alleged infringing process, and the prior art processes.

To extract the sugar from sugar beets, the latter are sliced into pieces resembling in shape and size shoestring potatoes, and such pieces are known in the art as "cossettes". To remove the sugar solution from these cossettes, they are immersed and agitated in heated water with the result that sugar solution is expelled or diffused from the cossettes and is simultaneously replaced by water. When the water (known as juice) surrounding the cossettes becomes laden with sugar to approximately the same extent as the solution remaining in the cossettes, a point of equilibrium is reached and diffusion of sugar from the cossettes ceases. For this reason the cossettes are successively (in stages) immersed in the juice which is progressively less laden with sugar so as to effect a substantial complete transfer of the sugar from the cossettes to the surrounding juice.

This progressive depletion of the cossettes has long been accomplished by using a number of separate cells (tanks) in which the cossettes are progressively subjected, as they become depleted, to the progressively less laden juice, so as always to maintain a differential between the sugar content of the extracting juice and the sugar content of the cossettes to the end that the cossettes will finally be substantially completely depleted of their sugar content. In the last stage of the process, when the cossettes are almost entirely depleted, they are subjected to the action of unladen water, whereas in the first stage, when the cossettes are fully laden with sugar, they are subjected to the most concentrated juice. In the intermediate stages the cossettes progressively become more depleted and

the extracting water-sugar solution or juice progressively becomes more concentrated or laden with sugar.

It will, therefore, be seen that the process is generally countercurrent (Tr. 190-191) in that the fresh water first processes the most depleted cossettes and then progressively processes cossettes of progressively lesser depletion until at the end of the process, the extracting solution is most heavily laden and the cossettes are the least depleted. From that point the sugar-laden solution or juice is processed to remove the sugar therefrom and the depleted cossettes are used to make by-products.

The fundamental and specific rules by which this generally countercurrent diffusion process is conducted was old and well known for a long period of time before Silver entered the field, a fact which Mr. Silver admitted (Tr. 112-113).

The disclosures of the Silver patents.

Since both patents in suit disclose almost identically the same process and apparatus, the following discussion is applicable to both.

The Silver patent (Tab 11, Silver Exhibit A) claims are directed solely to the process and the only claims in suits 1, 2, 4, 6, 8, 11, 12 and 13 were all held by the District Court to be infringed. The second Silver patent contains both process claims and apparatus claims, of which claims 2, 3, 4 (apparatus) and claims 7, 9, 10 and 11 (process) were held below to be infringed. The Silver apparatus (known as a sugar beet diffusing battery) includes a number of separate vertically disposed U-shaped cells, each

having parallel downward and upward legs connected at their bottoms. A continuous chain conveyor travels through all of the cells and operates continuously, going down the first leg of each cell, around the base of its U and up the other leg to the next cell, and serves to convey the cossettes progressively and continuously through the battery of cells, and to then discharge the cossettes when they emerge from the upper leg of the last cell. The conveyor, as it passes from the upper leg of one cell to the downwardly extending leg of the succeeding cell, carries the cossettes out of the fluid or juice in the cell and dumps it by gravity into the upper end of the downwardly extending leg of the succeeding cell. The extracting solution or juice runs generally countercurrent, as before stated, to the travel of the cossettes. That is to say, fresh water is admitted in the last cell or the cell from which the cossettes are going to be discharged, and progressively travels by gravity or pumps from the last cell through the entire battery of cells to the first cell, this cell being the cell into which the cossettes are introduced, and then is drawn off for further processing.

This method of conveying cossettes successively through a number of cells, wherein the cossettes are subjected to the extracting action of the solution or juice progressively from the first to the last cell in a continuous action, and wherein the extracting solution travels progressively from the last cell to and through the first cell was not new with Silver, as he admits in his deposition (Tr. 281), and as is disclosed in the patents to Steffen (Tab 13, OL. 8-A), Turrentine (Tab 14, OL. 8-B), Gazagne (Tab 15,

OL. 8-C), Neufeldt (Tab 16, OL. 8-D), Dobler (Tab 17, OL. 8-E), Krauss (Tab 18, OL. 8-F), Rak (Tab 19, OL. 8-G), and Olier (Tab 20, OL. 8-H).

For example, in the Olier patent (Tab 20, OL. 8-H), almost the same type of cells are used and the cossettes are progressively passed through the cells in a like manner by means of a similar chain conveyor. In certain of the other patents, however, a helical conveyor is substituted for the chain conveyor, but this change is of no importance, as admitted by Mr. Silver (Tr. 97). The Olier patent (Tab 20, OL. 8-H) differs from the Silver disclosures in that in the Olier patent the flow of the juice and cossettes is strictly countercurrent. That is to say, the cossettes are conveyed continuously and progressively through all of the cells in one general direction, while the flow of extraction juice flows progressively through the cells in exactly the opposite direction. In the Silver patents this is not true because in each cell or stage the extracting solution and the cossettes travel in the same general direction; that is to say, downwardly in the downwardly extending leg of each cell, and then upwardly in the upwardly extending leg of each cell to the upper end thereof. At this point the cossettes are transferred to the next succeeding cell toward the cossette discharge end of the machine, while the juice transfers to the next succeeding cell toward the cossette inlet end of the machine. Thus, in flow pattern, the flow of the extracting solution is generally countercurrent to the direction of travel of the cossettes, as far as the whole battery is concerned, but the flow of the juice in each

cell is in the same direction as the direction of travel of the cossettes. This is the basis for the use of the flow term "countercurrent concurrent flow".

However, this exact "countercurrent concurrent flow" through a battery of this type is not new in the art and was not originated by Mr. Silver, as he testified in his deposition (Tr. 281). In fact, Mr. Silver had to so admit because this is the exact flow pattern in Rak (Tab 19, OL. 8-G), Neufeldt (Tab 16, OL. 8-D), Krauss (Tab 18, OL. 8-F), Gazagne (Tab 15, OL. 8-C), Turrentine (Tab 14, OL. 8-B), Steffen (Tab. 13, OL. 8-A), and others. The flow in individual cells shown in the Silver disclosures, that is, having the cossettes travel in "downward and upward courses" in each stage and having the juice flow concurrently therewith during such travel, is likewise admitted to be old by Mr. Silver in his deposition (Tr. 281).[1]

We further point out that, according to Mr. Silver's own admissions, his patents do not set forth any formula

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[1] "Q. Now, in your patent, Plaintiff's Exhibit 1, during the time the cossettes are immersed in the juice, the juice and the cossettes flow concurrently, do they not? A. Yes, substantially so.

Q. To your knowledge, was that new at the time you filed this application, in August of 1942, in diffusers generally? A. I do not recall whether I thought so at that time.

Q. We are not interested in that. Did you know at that time, or did you subsequently determine, that that was old at the time that you filed your application? A. Yes.

Q. What did you determine? That it was old? A. That it was old."

* * * * * * *

"Q. At the time you filed your application, was it new or old to have a treatment zone in which cossettes were immersed in fluid flowing concurrently, in which there were upward and downward courses of cossette travel? A. At least subsequent to the filing of my patent application, mentioned, it was recognized that that was old.

Q. You mean that that was old prior to the time you filed your application? A. Yes."

or fundamental and specific rules by which the diffusion process is practiced by his apparatus or by his process. The patents merely set forth generally mechanical steps to follow, which are given heretofore, without giving any directions as to temperature, time of cossette travel, time of cossette submergence, extent or degree of agitation, or other yardstick by which to practice. This was, of course, left to those skilled in the art having full knowledge of the process of diffusion by which the Silver apparatus operates because of the antiquity of that process. This is amply borne out by Mr. Silver himself in his testimony (Tr. 112-114).[2]

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[2]"Q. Do you find anything in your patents that would teach you the effect of temperature on the process of diffusion? A. No.

Q. That is another thing that is left to the engineer, those of skill in the art? A. Yes.

Q. That has been a fact and well known, the effect of temperature on diffusion? A. Largely."

* * * * * * *

"Q. Then what is the factor that determines draft? A. The amount of water fed to the beets.

Q. That is the draft, isn't it? A. No, it is the tonnage of juice withdrawn from the process compared with the tonnage of the beets for the draft.

Q. And if you wish to get substantial exhaustion of the beets, however, and you determine first your draft, let's say you wish 125 draft, then that affects the time during which the beets must be submerged to get complete recovery or substantially complete recovery? A. I'm not sure I interpret your question exactly, but if I may reply——

Q. Go ahead. A. To determine the draft arbitrarily, that is something that is done mechanically by the admission of water to the beets, and a determination of the amount of juice being withdrawn. You can increase or decrease that.

Q. That is correct. A. Now, the higher the draft under equivalent conditions, the lower your pulp loss will be.

Q. The higher the draft the lower the pulp loss? A. Yes."

* * * * * * *

"Q. What effect does time have on the diffusion process? A. Time has both helpful and adverse effects on the diffusion process. Greater time increases the extraction in per cent of sugar, but it also increases the per cent of impurities withdrawn.

Thus, we strenuously contend that all Mr. Silver did was to provide an apparatus which differed from the prior art in minor constructional details, and that he did not invent or originate any new process and that the process claims are merely statements of the functioning of his machine. This is borne out by the uncontradicted testimony of Mr. Shafor (Tr. 190-191).[3]

Q. Now, does your patent teach any of those facts? A. No.

Q. The fundamental physical chemistry laws controlling that have been well known, haven't they, they were demonstrated by Robert? A. Those things I have just mentioned have been well known."

* * * * * * *

"Q. (By Mr. Mellin). Going back to diffusion, then to the effect of substantially or reasonably complete diffusion, the time of submergence is a factor? A. It is.

Q. And the temperature is a factor? A. Yes.

Q. And likewise the differential between the sugar concentration in the beet and the sugar concentration in the juice that it passes through is also a factor? A. That is a factor.

Q. The last factor I mentioned goes back to draft again, doesn't it? A. In part.

Q. But the fact that diffusion depends upon or is influenced and that diffusion is effected chemically by the relationship of time, of submergence, temperature, and the differential between the sugar concentration in the beet and the sugar concentration in the juice, those factors have all been well known, haven't they? A. Largely.

Q. That is, those are the same physical chemistry fundamental laws, by which the Robert patent works? A. The theoretical laws have been understood, but the practical application less so.

Q. Well, now, in the Robert Battery the cossettes are subjected, as they progressively become depleted, to progressively weaker solution, aren't they? A. That's right.

Q. And stating it broadly in that fashion, that is exactly the same as the Morton diffuser, isn't it? A. Stating it broadly, it is."

[3] "Q. * * * Now, in the process of diffusion, is there any difference between the process as carried out in the Morton Diffuser of diffusion that there is in a Robert Battery? A. No.

Q. What is the comparison between the two as far as actual process of diffusion is concerned? A. Robert's Battery is essentially a counter concurrent battery from beginning to end. The only point is that we in the Robert's Battery have no way of transferring cossettes from one cell to the next. Therefore, we

Silver, by expressly disclaiming machines and processes in which the cossettes flow through a horizontally disposed treatment zone from the scope of his patent claims in order to avoid the prior art and to obtain the patent, thereby disclaimed and surrendered the right to now contend to the contrary that his patent claims include such machines and processes.

When Silver filed his application for his first patent (Tab 11, Silver Exhibit A), he included twenty claims (pages 18 to 25 of Exhibit C), not one of which was limited to or defined a process in which each treatment stage included "alternate downward and upward courses of cossette travel". Therefore, *as filed,* the claims included not only the *vertical cells, or stages,* as shown and claimed in the patent, but also "horizontal cells *and stages*" as used in the accused Morton battery and disclosed in the prior art patents. The Patent Office recognized this and

---

manually dump them and get rid of them as soon as they are exhausted. In the two continuous batteries I have seen here and studied, we substitute a mechanical means which will do the transferring and end the manual labor that we use to get them out of the system on the Robert's Battery.

Q. Now, then, on the Robert's Battery, it is a fact, isn't it, that the fresh water that is entered into the battery in the process is first passed through the cossettes most depleted? A. Yes.

Q. And then progressively as that juice picks up sugar, it is progressively passed through cells of cossettes of lesser depletion? A. That is right.

Q. And is that essentially different or essentially the same as the Morton, except for a continuous mechanical movement. A. Essentially the same.

Q. Is there any step in the Morton picture, by the Morton machine, which varies this formula, old formula of sugar diffusion which you have stated? A. No.

Q. Would you state whether or not in the Morton Battery, whether the cossettes are caused to move up and down or just agitated in any other direction, would make any difference as far as diffusion is concerned, or the time rate of diffusion? A. No difference. Relative velocity is the thing.

Q. Relative movement between the cossettes and juice? A. That is right, surrounding juice."

rejected the claims on the disclosures of prior art patents (Exhibit C, page 29), the most pertinent of which are the following which are here in evidence:

Steffen (Tab 13, OL. 8-A)
Turrentine (Tab 14, OL. 8-B)
Krauss (Tab 18, OL. 8-F)
Neufeldt (Tab 16, OL. 8-E)
Gazagne (Tab 15, OL. 8-C)
Olier (Tab 20, OL. 8-H)

The Patent Office, in rejecting the claims, stated (Exhibit C, pages 29 and 30):

> "The claims are further rejected as unpatentable over any of Steffen, Turrentine, Krauss or Neufeldt. Each of these patents shows a diffusion process which comprises the progressive movement of cossettes through a treatment zone having a plurality of separated treatment stages, in the sense that applicant's process is comprised of separated stages, in both of the disclosed embodiments. Juice flows progressively through the stages in a course generally countercurrent to the cossette travel, and concurrent in each of the treatment stages. The references show both mechanical propulsion and gravity flow, sealed and unsealed. The rate of flow is not shown to be critical and whether the rate of flow of the juice be greater or less than that of the cossettes is a matter of choice which may well be left to the judgment of the operator."

In response to this rejection, Silver acquiesced therein and *canceled all of the original claims* and substituted fourteen entirely new claims (Exhibit C, pages 32 to 39).

The new claims likewise did not define the process as including "alternate downward and upward courses of cossette travel" and included both vertical machine operation, as shown in the patent, and horizontal machine operation, as in the accused Morton machine and prior art machines. These claims were also rejected (Exhibit C, pages 44 and 46) and were canceled (Exhibit C, page 47) by Silver. Silver then submitted another entirely new set of claims (Exhibit C, pages 47 to 57, incl.) which became claims 1 to 11 of the patent in suit (Tab 11, Silver Exhibit A). These claims differed from the previously rejected and cancelled claims in that each and every one of them defines and limits the process to one in which *each treatment stage includes "alternate downward and upward courses of cossette travel"*.

Silver, in arguing that the claims so limited distinguished from and constituted invention over the prior art and that such "upward and downward courses of cossette travel" was a material part of his invention, stated as to such limitation in the claims as follows (Exhibit C, page 58):

> "In this connection, it should be noted that the cossettes which are the material being treated vary considerably in specific gravity, to such an extent that at times they float on the juice with which they are mixed, while at other times they sink in such juice. As a result, any treatment which requires the movement of the cossettes through a horizontally disposed treatment zone cannot insure adequate and uniform extraction, as the juice-cossette contact areas of such zone are relatively small in proportion to the volumetric capacity of the zone."

Note that in such statement (stated by Silver to be correct in his testimony, Tr. 117 and 118) Silver contends that horizontal stages (such as applicant's and prior art patents employ) would not insure adequate and uniform extraction, and from this contended that the newly submitted claims which excluded such horizontal stages were patentable over and patentably distinguished from the prior art patents cited.

Silver, on page 59 of Exhibit C, amplifies the difference in effect on extraction between his claimed "upward and downward course of cossette travel" and the cossette travel in horizontal cells (like the accused Morton machine) by stating (Exhibit C, page 59):

> "Applicant uses the arrangement shown in Figs. 1 and 2 to provide upward and downward courses in which the juice and cossettes are so intermixed that all exposed surfaces of the cossettes are continuously and completely in contact with juice through the entire range of the concurrent movement. Further, during said movement the juice is impelled by the cossettes and tends to drag against said surfaces to insure a substantial penetration of the juice into said surfaces.
>
> "Particularly in the upward course, the juice is moved in opposition to gravitational influences until it reaches the elevated point of withdrawal, and in this action a substantial penetration of cossette surfaces results because of the gravitational urge. Thus, applicant attains a high degree of extraction in a relatively short treatment interval, while using gravity flow in the countercurrent circulation of juice. The operating cost of the operation is very low, while the efficiency has not been duplicated on a commercial scale by any other process."

Silver reiterated on page 59 of Exhibit C that if the machine employs a horizontal tank with a spiral type of conveyor (which the accused Morton battery employs) for movement of the cossettes in the tank, as shown in the prior patents, a uniform mixture of juice and cossettes cannot be obtained. We quote (Exhibit C, page 59):

> "The arrangements shown in Turrentine and Steffen employ a horizontally disposed tank having a spiral type conveyor for movement of the cossettes. With juice in the tank and cossettes fed thereto, they may either float on the surface of the liquid or sink to the bottom, depending on their specific gravity, and thus there would not be a uniform intermixture of juice and cossettes such as applicant provides."

Silver then makes the flat admission that the claims distinguish from the prior art and are patentable because they are limited to a process in which each stage includes upward and downward courses of cossette travel, as follows (Exhibit C, page 60):

> "The rejected claims have been cancelled and a new set of claims substituted therefor. All of the new claims are based on claim 35, *which distinguishes from the cited art practices in reciting the treatment of the cossettes at each stage in upward and downward courses and the withdrawal of the juice near the top of the upward course* to permit draining of the cossettes before they are again brought in contact with the juice." (Italics ours.)

After these statements and contentions by Silver, the claims were granted.

After formal allowance (Exhibit C, page 61), Silver added five additional claims, which are (Exhibit C, pages 62 to 66) claims 12 to 16, inclusive, of the patent in suit (Tab 11, Silver Exhibit A), each and every one of which include the express limitation that each "stage including alternate downward and upward courses of material travel". The patent (Tab 11, Silver Exibit A) in suit then issued with all of the claims so expressly limited.

Thus, it cannot be seriously questioned that Silver in order to avoid the prior art and obtain his patent (Tab 11, Silver Exhibit A), limited the patent claims to a vertical type machine and mechanical process in which each treatment stage included *alternate downward and upward courses of cossette travel.* This limitation was inserted into and remains in each and every claim of that patent to expressly avoid the prior art machines and processes in which the cossettes were directed through *a horizontally disposed treatment zone* just as in the accused Morton machine.

There is no "alternate downward and upward courses of cossette travel" in each cell or stage of the Morton battery in its operation within the meaning of that phrase as used in the claims of the first Silver patent, Tab 11, Silver Exhibit A.

As before set forth herein, each claim of the first Silver patent is limited to a process in which each stage (meaning the travel of the cossettes through one cell) includes "alternate downward and upward courses of cossette travel". In the Silver machine, each cell is a vertical U-shaped cell and the cossettes are dropped into baskets at the top of one leg of the U, and the baskets are forced downwardly by their connection through the moving chain

down through that leg of the U, around the bottom of the U, and then up to the top of the other leg of the U, where they are discharged into the next cell. Silver contended before the Patent Office, as set forth herein, in order to secure the allowance of these claims over the prior art, that this defined a new step materially different from that employed in batteries having *horizontal cells* as shown in the prior art.

However, for the purposes of this suit and to show that the Morton battery in its operation came within these limited patented claims, Silver now makes a contrary contention which is that in the horizontal cells of Morton there are "downward and upward courses of cossette travel". To find such "downward and upward courses of cossete travel" in the Morton horizontal cell was not only difficult for Silver, but also apparently for the trial Court because the trial Court and Silver seem to disagree to some extent as to just where such "downward and upward courses of cossette travel" are found in the Morton battery. For example, on this point Silver testified in his deposition (Tr. 280) as follows:

> "Q. Does the Morton diffuser have upward and downward courses of cossette travel in its operation? A. It does.
>
> Q. Will you please tell us, as precisely as you care to, what part of the travel of the cossettes through the Morton diffuser constitutes what you term upward and downward courses of cossette travel? A. The movement down into each cell of the cossettes——
>
> Q. Let us take that one—the movement down into each cell. That is when they are dumped into the cell by the transfer mechanism? A. That is right.

Q. All right, go ahead. And the next? A. —— and the rotative effect of the screw in imparting an upward and downward movement of the cossettes within the cell, and the upward movement of the cossettes in the final transfer mechanism.

Q. That is, 'In the final transfer,' that is when the fork lifts the cossettes out of the one tank and rotates them and drops them into the next tank? A. Yes."

The trial Court found the "downward and upward courses of cossette travel" in each cell as follows (Tr. 34):

"* * * The rotation of the spokes of the open scroll in the Morton Machine effects a downward movement of the cossettes and their submergence, and from that position upward travel is compelled by the lifting action of the Morton fork. * * *"

Both of the above explanations of how the "downward and upward courses of cossette travel" occur in a horizontal cell ignore the true meaning of that limitation in the claims as defined by Silver as before set forth in obtaining the allowance of the claims. Also, the trial Court overlooked the fact that if the upward and downward courses occur in the Morton battery, as stated by both Mr. Silver and found by the trial Court, then these claims do not distinguish from the prior art patents; for example, the patent to Steffen (Tab 13, OL. 8-A), which uses a rotary or helical screw (like Morton) to move the cossettes and juice through a horizontal cell and a similar rotary screw to elevate the cossettes out of the cell, in a fashion the equivalent of the Morton battery as far as that operational step and mechanism is concerned.

The prior art is replete with horizontal cells showing interrupted screws for the purpose that Morton uses his to advance the cossettes and juice longitudinally of the cell; for example, see the patents to Gazagne (Tab 15, OL. 8-C), Krauss (Fig. 2) (Tab 18, OL. 8-F), and Dobler (Tab 17, OL. 8-E). In other words, as clearly shown by the file wrapper, as herein set forth, Silver distinguished his process from processes of the prior art like Morton's by the express insertion of the limitation "upward and downward courses of cossette travel" and gave that limitation a clear and unequivocal meaning as set forth hereinbefore, and should not at this time be heard to now attempt to expand his claims to include the prior art devices from which he expressly distinguished and said were different. Our position is that if these claims do not distinguish from the prior art patents above referred to by the limitation "downward and upward courses of cossette travel" in each cell and, consequently, include the Morton battery, then they also include the prior art batteries and processes and the claims are clearly invalid. If, however, those claims distinguish by that limitation from the prior art, then by the same yardstick they do not include the Morton battery and noninfringement is clear.

The Silver claims do not patentably distinguish from the teachings and disclosures of the prior patents, particularly the patent to Olier (Tab 20, OL. 8-H), Krauss, Fig. 1 (Tab 18, OL. 8-F) and Rak (Tab 19, OL. 8-G), even if the limitation in the process claims of the "downward and upward courses of cossette travel in each stage or cell" is strictly construed.

Although the Silver claims may distinguish linguistically in minor details from the prior art disclosures, those prior art disclosures show the claimed processes and

apparatus completely in substance. For example, the prior art patents above referred to all disclose a diffusion process in which the movement of the cossettes is continuous through a series of cells or zones, or stages, for diffusion, and in which the cossettes are fed into one end of the battery and are discharged at the opposite end. They also disclose that this latter end is the point where the diffusion juice enters, and that it travels countercurrently through the various cells and is discharged at the opposite end of the machine precisely as in the patent disclosures. In other words, the process of diffusion is exactly the same.

Also, it is shown to be old in these patents, except Olier (Tab 20, OL. 8-H), the fact that while in a treatment cell or stage, the diffusion juice travels concurrently with the cossettes. Also, in the prior patents the cossettes are drained during transfer from one stage or cell to the succeeding cell with the drainage juice going back into the cell from which the cossettes are lifted. Also, in these prior patents the liquid is subjected to a screening action before it passes from one cell to the succeeding cell or stage, and the liquid and the cossettes are separately discharged from the battery.

The only manner in which Silver distinguishes from these prior patents is in unimportant details unaffecting the process or operation of the patents as a whole. It is true that certain of these patents include additional features, such as compressing of the cossettes, but inasmuch as the claims do not exclude such a step, they certainly read on and include within their scope these prior art practices and are, consequently, invalid. In this connec-

tion, the Olier patent (Tab 20, OL. 8-H) shows Silver's almost precise apparatus, except the fact that the diffusion juice runs directly concurrent to the travel of the cossettes in each cell as well as generally, but this poses the question of whether or not in view of all of the other patents (which show it to be old to use the countercurrent concurrent flow cycle) it would be invention to take the Olier apparatus and substitute for its countercurrent flow the countercurrent concurrent flow of the other prior processes disclosed in the prior art. We urge strenuously that such is mechanical skill and not patentable invention, and that the claims in suit are invalid.

In Appendix I to this brief we have made a detailed comparison between typical claims of the two Silver patents and two selected prior art patents to show that these claims include within their scope these prior art patents and are thus invalid.

It would certainly appear from this record and from the contentions of the appellee Silver herein that if the processes of Steffen (Tab 12, OL. 8-A), Krauss (Tab 18, OL. 8-F), Rak (Tab 19, OL. 8-G), Neufeldt (Tab 16, OL. 8-D) and Gazagne (Tab 15, OL. 8-C) came after the issuance of the Silver patents, it would be contended that those processes and apparatus infringed the Silver patents. Therefore, this raises the application of the rule well known to this Court "that which would infringe if later would anticipate if earlier."

The process claims in suit numbers 7, 9, 10 and 11 of the second Silver Patent (Tab 12, Silver Exhibit B) are invalid in that those claims do not define an invention different and patentably distinguishable from the process claimed in the earlier issued Silver patent.

Silver's first patent (Tab 11, Silver Exhibit A) issued on December 4, 1945, and his second patent (Tab 12, Silver Exhibit B) issued almost four years later, to-wit, April 26, 1949, on an application filed September 28, 1945 (three months before the first patent issued), so that for approximately three months' time the applications were copending.

When the process claims 7, 9, 10 and 11 of the second Silver patent are compared with the disclosure and claims of the first Silver patent, it is obvious, first, that the two are directly to exactly the same process. Second, that the process claims of the second Silver patent define nothing different or anything which constitutes an invention over the process claims issued in the first Silver patent. The difference between the two sets of process claims of both patents was succinctly stated by counsel to the District Court, and we adopt such a statement as follows:

> "Claim 7 (of the second patent), which is typical of the process claims in this patent, is also of interest, but it will not be set forth in full here because it will be simpler to consider it as including all of the steps of claim 1 of the first patent, plus the improvement step of—
>
> " 'subjecting said liquid to a screening action at a point adjacent to but below the liquid level before the liquid passes from said treatment stage to the next stage along its countercurrent course.'
>
> "In other words, this claim is a process claim covering the same steps as those constituting the process

of the first patent, except that it is limited to the new and improved feature of draining below the liquid level, as illustrated in Figure 5 of the patent."

Therefore, obviously, the only difference between the processes claimed in the two patents is the point at which the liquid is screened before it discharges from one cell to another. This difference is not a difference in substance but merely a difference in words, as Mr. Silver so aptly pointed out in his testimony at Tr. 105-106, where he testified on this exact point as follows:

"Q. There is practically no difference in point of elevation of the discharge of the juice from a cell in the first and second patents, is there? A. That is right.

Q. The only difference is that in one you get a larger screen area to effect screening? A. In the second.

Q. In the second yes, and in the second patent you have foranimous trays which aids in the drainage? A. That is right.

Q. And that is the only difference between the first patent and the second patent, material difference? A. The only material difference."

In view of that testimony, it cannot be seriously contended that the process claims of the second patent can be held as patentably distinguishing from the process disclosed in and claimed by the first patent. It is true that in claim 11, for example, there is an additional limitation over claim 7, which adds to claim 7 that the liquid moves at a different rate than the divided material along the course of concurrent movement of said materials. There is no proof in the record that this is the case in the

Morton battery, but even if it is so, this step added nothing patentable to the claims as was so aptly expressed by the Patent Office examiner (Exhibit D, page 92):

> "Since the rate of flow is not critical the recitation in claim 45 of 'a different rate' does not constitute a patentable limitation."

A DETAILED COMPARISON OF THE ACCUSED MORTON MACHINE WITH THE PRIOR ART PATENTS IN EVIDENCE CONCLUSIVELY SHOWS THAT THE MORTON MACHINE IN ITS CONSTRUCTION AND MODE OF OPERATION FOLLOWS THE TEACHINGS OF THE PRIOR ART AND NOT THE SILVER DISCLOSURES.

The disclosure of the Steffen patent (Fig. 1 thereof) as compared with the accused Morton machine.

This prior art patent, Tab 13, OL. 8-A, according to the evidence, describe and diagrammatically illustrates apparatus having substantially the same operational steps of the accused Morton machine and similar and equivalent mechanical elements for performing such steps.

The Accused Morton Machine.

The accused Morton machine is constructed and operates as follows:

1. a plurality of separate horizontally disposed cells through which the cossettes and juice travel generally horizontally from one end of the cell to a point short of the other end

2. the direction of the travel of the juice through the entire machine is generally countercurrent to the direction of travel of the cossettes

The Steffen Disclosure.

(See Tr. commencing page 195.)

The apparatus shown in Fig. 1 of the Steffen patent is constructed and operates as follows:

1. a plurality of separate horizontally disposed cells through which the cossettes and juice travel generally horizontally from one end of the cell to a point short of the other end

2. the direction of the travel of the juice through the entire machine is generally countercurrent to the direction of travel of the cossettes

3. the cossettes are introduced into one end of the machine and travel in a generally horizontal sinuous course successively through the cells from one end of the machine to the other	3. the cossettes are introduced into one end of the machine and travel in a generally horizontal sinuous course successively through the cells from one end of the machine to the other
4. The juice is admitted at the end of the machine opposite to that into which the cossettes are introduced and travels in a sinuous course successively through the cells from one end of the machine to the other by gravity	4. The juice is admitted at one end of the machine opposite to that into which the cossettes are introduced and travels in a sinuous course successively through the cells from one end of the machine to the other under the influence of pumps

Note: The evidence is clear that whether the juice travels through the machine by gravity or under the influence of pumps is completely immaterial to the diffusion process and one is the full equivalent of the other. This is evident from the Silver patent itself where it states (page 4):

> "the liquid may be subject to pumping or other pressure influences for its positive movement through the treatment."

Also, Mr. Shafor testified (Tr. 205) that there is no difference in the use of pumps or gravity as far as the diffusion process is concerned. This was corroborated by Mr. Silver himself, who testified that if the proper pump selection was made, it would operate with the same effect as gravity (Tr. 95). In fact Mr. Silver testified[4] that his

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[4]Tr. 95:
"Q. Would you say that your process included either pumping or by gravity flow—that is the process in your patent, Exhibit A—or not? A. Yes."

process included either moving the juice by pumps or by gravity.

5. the direction of travel of the juice and cossettes is concurrent and generally horizontal throughout the major portion of each cell	5. the direction of travel of the juice and cossettes is concurrent and generally horizontal throughout the major portion of each cell
6. after traveling generally horizontally through a major portion of each cell the cossettes are elevated by a rotating mechanism to the adjacent end of the succeeding cell and deposited in such cell by gravity	6. after traveling generally horizontally through a major portion of each cell the cossettes are elevated by a rotating mechanism to the adjacent end of the succeeding cell and deposited in such cell by gravity

Note: The rotating means in Steffen Fig. 1 (Tab 13, OL. 8-A) is the conventional form of scroll conveyor "a" (in the drawings), the lower end of which projects downwardly into the cell and the upper end of which overlies the end of the succeeding cell.

Draining in Steffen will be accomplished as described by Mr. Shafor (Tr. 197-198), during the upward travel of the cossettes during transfer. Mr. Shafor testified (Tr. 198) that there was a perforated wall at the bottom of the transfer conveyor "a".

7. a draining action of the cossettes is effected during the transfer of the cossettes from one cell to the succeeding cell, the drainage draining back into the cell from which the cossettes are removed	7. a draining action of the cossettes is effected during the transfer of the cossettes from one cell to the succeeding cell, the drainage draining back into the cell from which the cossettes are removed

Note: Mr. Shafor so testified (Tr. 197-198) and no evidence was offered to the contrary.

8. each cell has a rotating, propelling and agitating means revolving on a horizontal axis extending longitudinally of the cell to move the cossettes horizontally therethrough and to rotatively agitate them in the juice. This means is a ribbon type of screw conveyor.	8. each cell has a rotating, propelling and agitating means revolving on a horizontal axis extending longitudinally of the cell to move the cossettes horizontally therethrough and to rotatively agitate them in the juice. This means is a helical conveyor not shown whether it is a solid or interrupted or ribbon type.

Note: Assuming that the drawings of Steffen illustrate a solid type of conveyor, this is the same in effect as the ribbon type except that it would provide less agitation. This was testified to by Mr. Shafor at Tr. 222 without contradiction. The evidence is that in one of the Morton cells there is a solid type of conveyor which has operated satisfactorily (Tr. 176). Mr. Silver himself testified that when he made his first horizontal machine, he used a solid type scroll conveyor and found that it did not agitate sufficiently, so he replaced it with an open scroll type. This makes it clear that one skilled in the art, when finding one form of agitator provides insufficient agitation, can readily substitute other well known forms of agitators from his knowledge of the art and without the exercise of any invention.

9. each cell has a rotating member for engaging the cossettes in the cell and elevating the cossettes above the fluid level and transferring the cossettes to the succeeding cell into which they drop by gravity	9. each cell has a rotating member for engaging the cossettes in the cell and elevating the cossettes above the fluid level and transferring the cossettes to the succeeding cell into which they drop by gravity

Note: In the Morton machine this element is a rotating fork, while in Steffen it is a rotating screw conveyor.

Both, however, perform the same function to effect exactly the same result (Tr. 197-198). It will be noticed that the transfer conveyor of Steffen, Fig. 1 extends down into the cell so as to lift the cossettes and elevate them out of the cell to a point above the liquid level, so that they can drain, and then deposit them at a point from which they will discharge by gravity into the end of the next succeeding cell (Tr. 197).

10. the cells are arranged at successively higher levels and the travel of the cossettes is from the cell of the lowest level through the succeeding cells in general up-hill fashion	10. the cells are arranged at successively higher levels and the travel of the cossettes is from the cell of the lowest level through the succeeding cells in general up-hill fashion
11. the juice is introduced in the cell of highest elevation and travels successively in a down-hill direction through the cells of lowest elevation by gravity	11. the juice is introduced in the cell of highest elevation and travels successively in a down-hill direction through the cells of lowest elevation by pumps, although the flow through each individual cell is by gravity
12. the introduction of the fluid in each cell is at substantially the fluid level in the cell and the outlet or discharge from the cell is just slightly below the fluid level in the cell	12. the introduction of the fluid in each cell is slightly above the fluid level in the cell and the outlet or discharge from the cell is just slightly below the fluid level in the cell
13. the cossettes and the juice are separately discharged from the machine	13. the cossettes and the juice are separately discharged from the machine
14. there is no recirculation for heating purposes of the juice in each cell	14. there is a partial recirculation of the juice in each cell for the purpose of temperature control

Note: As Mr. Shafor testified (Tr. 199), the recirculation would not affect the diffusion process, but would have the additional advantage of temperature control, which is

important in diffusion. He did state, however, that it might have some effect on the time of diffusion. In other words, if the juice is recirculated, it would take a longer time for diffusion. This, however, is a difference merely in degree and not in substance and if the recirculation feature was not wanted, certainly any mechanic skilled in the art could eliminate it from the Steffen Fig. 1 disclosure by employing simple mechanical skill, particularly in view of the other prior patents; for example, Gazagne (Tab 15, OL. 8-C) which shows the Morton gravity flow.

From the foregoing it is clear that the Morton machine and its operation and the Steffen machine and its operation are identical in all important aspects and differ only in three minor details. These three minor differences (not including details of mechanical construction) are:

(1) That the juice is transferred from cell to cell in the Steffen patent by pumps rather than by gravity as in the Morton machine. However, the use of pumps and the use of gravity are full equivalents as set forth in the Silver patent itself, and as testified to by Mr. Shafor and admitted by Mr. Silver (Tr. 95).

(2) The second difference is the difference in mechanical construction of the transfer mechanism, although both produce the same result in substantially the same way by equivalent mechanism.

(3) The third difference is that in Steffen there is a partial recirculation of juice in each cell. This, however, merely reduces the efficiency of the cell at most, according to Mr. Silver's own testimony, and does not substantially vary the process. Mr. Silver's testimony on this point is at Tr. 286 as follows:

"Q. And what would be the effect of such recirculation in the cell upon the efficiency and operative conditions of the cell and battery? A. They will reduce the efficiency of the cell."

Mr. Shafor on this same point testified at Tr. 199 as follows:

"Q. So that you get a re-circulation of part of the juice? A. It passes with the cossettes from left to right through the cell and again through the draining screen at the elevating mechanism and back into the reservoir. It completes a circuit as indicated by the red arrows and the red line. Its sole objective is to heat the juice and control its temperature, the temperature of the environment which the cossettes are maintained at in cell A-4.

Q. What effect, if any, would that have on the diffusion process as such? A. The effect of T in the formula I have given here—increased temperature means increased diffusion. Controlled temperature means controlled diffusion."

As to the clearness of disclosure of the Steffen patent, Mr. Shafor testified at Tr. 200[5] that Steffen clearly teaches him an operative medium by which continuous diffusion can be practiced and from which patent he would have no difficulty in producing an apparatus to practice the process disclosed. No contrary testimony was offered.

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[5] "Q. With respect to the Steffen patent, Exhibit 8-a, does that disclose to you, or does that teach you an operative medium by which continuous diffusion can be carried out? A. It does.

Q. Would there be any difficulty, to you, in designing a specific type of apparatus to practice the process disclosed in Steffen from that disclosure? A. No, no fundamental difficulty."

The disclosure of the Gazagne (Tab 15, OL. 8-C) patent as compared with the accused Morton machine.

This prior patent, according to the evidence, also describes and diagrammatically illustrates a diffusion battery having almost the precise operational steps of the accused Morton machine, with the exception that the juice is transferred from one cell to another by means of pumps and the cossettes discharge over a screen for draining and into the succeeding cell by gravity. However, it is pointed out that the draining action and discharge of the cossettes is included in the Silver patents in almost the precise form shown by Gazagne; for example, the type of apparatus disclosed in the Silver patent, Tab 11, S.A. Fig. 3. Mr. Silver so testified at Tr. 90-91, and Tr. 294,[6] and in addition testified that this type of draining would be effective.

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[6]Tr. 90-91:

"I show you what purports to be an enlarged photostatic drawing of the second sheet of the drawing of your first patent in suit, on which appears some red and green arrows which you may disregard, and the drawing is labeled Plaintiff's Exhibit 1 for identification, and I call your attention to Figure 3 as an apparatus for practicing the process of your patent, and that apparatus, as shown, will practice the process which you allege you have invented in your patent, will it not? A. It has never been tried, but it was indicated as one——

Mr. Mellin. Would you read the question to the witness, I don't think he quite understands.

(Question read.)

Q. Would you answer whether it will practice your process or whether it would not practice your process, Mr. Silver? A. It will.

Q. Now, in that process, you, as I understand it, and correct me if I am wrong, the beets go from the tank which is indicated at '6a' together with the juice into a pump '18', and thence up a conduit '6p', and then deposited by gravity upon a screen '20', and the juice passing through the screen into a collector, and the beets deposited by gravity into the second tank '6a'. That is correct, isn't it? A. Yes.

Q. And will that function correctly practice the process of the patent? A. From my present knowledge of the diffusion, I would say that this would be, it would be questionable now.

The Accused Morton Machine.

The accused Morton machine is constructed and operates as follows:

1. A plurality of separate horizontally disposed cells through which the cossettes and juice travel generally horizontally from one end of the cell to a point short of the other end,

2. the direction of the travel of the juice through the entire machine is generally countercurrent to the direction of travel of the cossettes,

3. the cossettes are introduced into one end of the machine and travel in a generally horizontal sinuous course successively through the cells from one end of the machine to the other,

4. the juice is admitted at the end of the machine opposite to that into which the cos-

The Gazagne Disclosure.

(See Tr. commencing page 202)

The apparatus shown in the Gazagne patent is constructed and operates as follows:

1. A plurality of separate horizontally disposed cells through which the cossettes and juice travel generally horizontally from one end of the cell to the other end,

2. the direction of the travel of the juice through the entire machine is generally countercurrent to the direction of travel of the cossettes,

3. the cossettes are introduced into one end of the machine and travel in a generally horizontal sinuous course successively through the cells from one end of the machine to the other,

4. the juice is admitted at one end of the machine opposite to that into which the cos-

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Q. You mean it would be questionable that it would be operative, that is, the apparatus shown in Figure 3? A. That we would get what we have now achieved in other apparatus.

Q. But it would practice the process, let's say, but not to the same degree of efficiency, is that what you mean to say? A. Yes.

Q. But the screening method of screening the material would function to drain the cossettes, would it not? A. It would.

Q. And there would be no harmful or injurious effect on the cossettes if they deposit by gravity into the second tank '6b', would there? A. I think not."

Tr. 294:

"Q. So that whether you recognize it as an advantage, the patent tells you you can use a screen there so that the juice will screen itself and the cossettes will drop off into the next tank? A. Yes."

settes are introduced and travels in a sinuous course successively through the cells from one end of the machine to the other by gravity,

5. the direction of travel of the juice and cossettes is concurrent and generally horizontal throughout the major portion of each cell,

6. after traveling generally horizontally through a major portion of each cell the cossettes are elevated by a rotating mechanism to the adjacent end of the succeeding cell and deposited in such cell by gravity,

7. a draining action of the cossettes is effected during the transfer of the cossettes from one cell to the succeeding cell, the drainage draining back into the cell from which the cossettes are removed,

8. each cell has a rotating, propelling and agitating means revolving on a horizontal axis extending longitudinally of the cell to move the cossettes horizontally therethrough and to

settes are introduced and travels in a sinuous course successively through the cells from one end of the machine to the other under the influence of pumps,

5. the direction of travel of the juice and cossettes is concurrent and generally horizontal throughout the major portion of each cell,

6. after traveling generally horizontally through each cell the cossettes are deposited into the succeeding cell by gravity,

7. a draining action of the cossettes is effected during the transfer of the cossettes from one cell to the succeeding cell by passing the cossettes over a perforated screen which discharges the juice in one direction for delivery to its succeeding cell and discharging the cossettes by gravity into the succeeding cell in precisely the same fashion as such operational steps are performed in the type of Silver apparatus shown in the Silver patent, Tab 11, Silver Exhibit A, Fig. 3,

8. each cell has a rotating, propelling and agitating means revolving on a horizontal axis extending logitudinally of the cell to move the cossettes horizontally therethrough and to

rotatively agitate them in the juice. This means is a ribbon type of screw conveyor,	rotatively agitate them in the juice. This means is an interrupted screw or paddle type scroll conveyor,
9. each cell has a rotating member for engaging the cossettes in the cell and elevating the cossettes above the fluid level and transferring the cossettes to the succeeding cell into which they drop by gravity,	9. each cell does not have a rotating member for engaging the cossettes in the cell to convey them above the fluid and to transfer the cossettes to the succeeding cell, but the cossettes are transferred to the succeeding cell by passing over an inclined screen precisely as in Fig. 3 of the Silver patent, Tab 11, Silver Exhibit A, to deposit by gravity into the succeeding cell and to be drained in exactly the same fashion (see Silver testimony, Tr. 91),
10. the cells are arranged at successively higher levels and the travel of the cossettes is from the cell of the lowest level through the succeeding cells in general up-hill fashion,	10. the cells are arranged at successively lower levels and the travel of the cossettes is from the cell of the highest level through the succeeding cells in general down-hill fashion,
11. the juice is introduced in the cell of highest elevation and travels successively in a down-hill direction through the cells of lowest elevation by gravity,	11. the juice is introduced in the cell of lowest elevation and travels successively in an up-hill direction through the cells by pumps, although the flow through each individual cell is by gravity,
12. the introduction of the fluid in each cell is at substantially the fluid level in the cell and the outlet or discharge from the cell is just slightly below the fluid level in the cell,	12. the introduction of the fluid in each cell is slightly above the fluid level in the cell and the outlet or discharge from the cell is just below the fluid level in the cell,
13. the cossettes and the juice are separately discharged from the machine.	13. the cossettes and the juice are separately discharged from the machine.

Mr. Shafor testified (Tr. 205) that the Gazagne patent teaches him a process of diffusion which may be practiced by the apparatus shown in the Gazagne patent and which would be operative. His testimony is as follows:

> "Q. Does this Gazagne patent, Exhibit 8-C, disclose to you, or does it teach you a process of diffusion which may be practiced by the apparatus shown in that patent? A. Yes.
>
> Q. To one skilled in the art such as yourself, or to you, could you readily construct a continuous diffusion apparatus operating as Gazagne shows it to be operated? A. Yes.
>
> Q. Would it be operative or not? A. It would."

From Mr. Shafor's testimony, commencing at Tr. 203, it is clear that the only difference betwen the Gazagne disclosure and the Morton battery is (1) in the pumping of the juice, (2) a different type of draining mechanism, and (3) a slightly different type of conveyor used. This testimony is uncontradicted.

We submit that if the Silver claims are construed to include the accused Morton machine and its operation, then they must be construed to include the Gazagne disclosure and its operation and are anticipated thereby, and if they are construed so as to avoid the Gazagne disclosure, then they cannot possibly be found infringed by the accused Morton battery in that the Morton battery closely follows the teachings of the Gazagne patent, except for minor details of mechanical construction.

The disclosure of the Neufeldt (Tab 16, OL. 8-E) patent as compared with the accused Morton machine.

This prior art patent disclosed the same cycle of operation for diffusing sugar beets as Morton, except that it has in addition to Morton a medium for compressing the cossettes during transfer thereof from one cell to another. In that the prior art clearly teaches that pressure of the cossettes is not essential (witness the Robert process, Steffen prior art patent (Tab 13, OL. 8-A), Gazagne prior art patent (Tab 15, OL. 8-C), and the Dobler prior art patent (Tab 17, OL. 8-E)), elimination of the pressure feature of Neufeldt and its function would not amount to a patentable difference. The Patent Office so held in passing on the Morton application (Morton Exhibit 2, page 37).

We emphasize that nowhere in the claims of either of the Silver patents are they limited so as *to exclude the use of pressure by any words of limitation.*

Mr. Shafor testified, without contradiction (see Tr. 208), that the Neufeldt disclosure includes a plurality of separate horizontally disposed cells through each of which the cossettes and juice travel (concurrently) generally horizontally from one end of each cell to a point short of the other end. The direction of the travel of the juice through the entire battery is generally countercurrent to the direction of travel of the cossettes, except that in each cell the cossettes and juice travel concurrently. The cossettes are introduced into the end of the battery opposite to the end in which the juice is admitted. After traveling generally horizontally through a major portion of each cell, the cossettes are elevated out of the juice

by a rotating mechanism and then deposited into the adjacent end of the succeeding cell by gravity. Draining action of the cossettes is effected (as well as compression thereof) during the transfer of the cossettes from one cell to the succeeding cell, the juice draining back into the cell from which the cossettes are removed. Each cell has a rotating, propelling and agitating means extending horizontally of the cell to move the cossettes horizontally from the inlet end thereof to the discharge end, and uses for this purpose a ribbon type of screw conveyor. The cells are arranged at successively higher levels and the travel of the cossettes is from the cell of lowest level through the succeeding cells in general uphill fashion, while the juice is introduced in the cell of highest elevation and travels successively in a downhill direction through the cells of lowest elevation by gravity. The cossettes and juice are separately discharged from the machine, of course.

In other words, from this the Court can gather that the only difference between the operation of the Neufeldt battery and the Morton battery is that Neufeldt, in addition to disclosing the use of all of the steps employed by Morton, includes the additional feature of compressing the cossettes during transfer.

If the helical conveyor in the cell of Morton and its fork elevator constitutes the downward and upward courses of cossette travel, then these upward and downward courses of cossette travel are found to the same extent and by the same yardstick in Neufeldt, because he likewise uses a ribbon type of conveyor and also uses a mechanism

for elevating the cossettes out of the end of the tank, permitting them to drain back into the tank.

Thus, if the claims of the Silver patents can be construed as including the Morton battery, then they cannot escape being construed as including the Neufeldt machine and are invalid. There is nothing in any one of the Silver claims which expressly excludes from their scope a machine which uses the additional feature of compressing the cossettes during transfer.

In Appendix II of this brief we have made a detailed comparison between the Neufeldt disclosure and the Morton machine.

The disclosure of the Krauss (Tab 18, OL. 8-F) patent (Fig. 2 thereof) as compared with the accused Morton machine.

This prior patent (Fig. 2 and its specification) discloses a continuous diffusion process and apparatus which, in all of its essential elements, is the same as the accused Morton battery and its operation (See Tr. 220). The only substantial difference between the disclosure of Krauss and the Morton machine is that Krauss, instead of using a rotating fork for draining the cossettes and transferring them from one cell to another, utilizes a conventional form of centrifuge into which both the cossettes and juice are deposited at the discharge end of each cell (Tr. 220). This effects drainage of the cossettes and a separation of cossettes and juice, and the cossettes are then discharged into a conveyor by which they are elevated and deposited by gravity into the end of the succeeding cell (Tr. 222). The juice meanwhile is directed to its succeeding cell in the general countercurrent concurrent scheme.

We point out to the trial Court that although a different type of transfer mechanism is used, the Silver claims are not limited to any particular type of transfer mechanism, merely defining the transfer mechanism by process steps of withdrawing the juice from the treatment stage and draining the cossettes. Therefore, the mechanical structure in Krauss, Fig. 2, accomplishing the same result as is accomplished by Morton's transfer mechanism, to-wit, drainage of the cossettes and separation thereof from the juice, is the complete equivalent of the Morton transfer mechanism. Consequently, if the vague and ambiguous claims of the Silver patents include the Morton type of transfer mechanism, they must also be deemed to include the Krauss type of transfer mechanism.

We also point out that in the drawing of Krauss, Fig. 2, the conveyor and agitator are illustrated as being both a solid scroll conveyor and an interrupted or paddle type of scroll conveyor. This, in accordance with the testimony, is the full equivalent of the ribbon scroll type of conveyor as used by Morton, as is admitted by Silver (Tr. 295).

A detailed comparison between the principal elements of Morton and Krauss is made in Appendix III of this brief.

The disclosure of the Dobler (Tab 17, OL. 8-E) patent as compared with the accused Morton machine.

This prior patent, Tab 17, OL. 8-E, according to the evidence commencing at Tr. 225, illustrates a diffusion battery for diffusing sugar in a continuous diffusing process, which battery, in construction, is almost a pre-

cise duplicate of the Morton battery, the only difference being that in Dobler the flow of juice is countercurrent in each cell rather than concurrent as in Morton. However, the countercurrent concurrent flow scheme being so old, it certainly would not be a patentable invention to substitute a countercurrent concurrent flow in the Dobler machine for its strictly countercurrent flow. As Mr. Shafor demonstrated, without contradiction (Tr. 214), only a simple mechanical change is required.

To show the very substantial similarity between the Dobler disclosure and the Morton machine, we make a detailed comparison therebetween in Appendix IV of this brief.

From the foregoing we believe it is evident that the Morton battery closely follows the teachings of the prior art and cannot, therefore, under the law, infringe the patents in suit.

EVEN IF VALID, THE APPARATUS CLAIMS IN SUIT NUMBERS 2, 3 AND 4 OF THE SECOND SILVER PATENT ARE NOT INFRINGED BY THE ACCUSED MORTON BATTERY BECAUSE THE MORTON BATTERY DOES NOT COME WITHIN THE SCOPE OF THOSE CLAIMS.

While we vigorously contend elsewhere in the accompanying brief that claims 2, 3 and 4 of the second Silver patent are invalid as being met by the prior art and for double patenting, we also contend that even if they are construed to be valid, they are not infringed by the accused Morton battery because the accused Morton battery, while accomplishing the same end result, does so by a mechanism which follows the teachings of the prior

art and which is different than that defined in these three claims. For example, each of these three claims of the second Silver patent includes the following definition or limitation of the construction of the Silver machine. We are quoting below from claim 2 of the patent as typical, and the bracketed inserts are our own:

> "* * * conveyor means [the endless chain conveyor] in each said cell for imparting said progressive movement to divided materials * * *, said conveyor means [the endless chain] including apertured members [the perforated flat plates bolted to the conveyor chain for conveying the cossettes through the cells], and a portion of said means [meaning the conveyor means with the perforated plates fixed thereto] extending above the level of liquid adjacent the discharge end of each cell [the upper ends of the conveyor chain above each cell] to elevate the divided material out of the liquid * * *."

This construction cannot possibly be found in the Morton battery. The Morton screw conveyor does not include "apertured members" as called for by the claims, nor does the screw conveyor extend above the liquid level to elevate the divided material out of the liquid. The Morton screw conveyor, as in the prior art, merely propels the liquid horizontally along the cell to one end thereof, at which point it is picked up by a rotating fork and elevated out of the cell and dumped into the succeeding cell.

Silver horizontal scroll diffuser.

Silver commenced to design a horizontal scroll type of diffuser in the first part of 1948. Silver's direct testimony on this point (Tr. 52) is as follows:

"Q. When did you conceive of the idea of utilizing the scroll conveyor in a diffuser? A. Oh, that had been in my thinking as a possibility all along. I had not worked out a specific design.

Q. When did you work out a specific design for the scroll type of conveyor? A. In the latter part of 1947 my ideas were consolidated and we commenced design the first part of 1948."

In this connection it is to be observed that Silver in his patent No. 2,390,131 at page 2, left-hand column beginning with line 64, merely suggests that his process can be performed in horizontally disposed cells but gives no indication in his specification as to how this might be done. Judging from the above testimony, a specific embodiment of this idea was not worked out by him until the latter part of 1947 or 1948.

Oliver-Morton horizontal scroll type diffuser.

The record shows that in contrast to this, Morton filed his first application for a horizontal scroll type diffuser on January 8, 1947. The file wrapper and contents of Morton's application, Serial No. 720,905 (Exhibit 2 to Morton Deposition, Silver Exhibit F-2, Tr. 347) shows that the Oath to this application was executed on December 9, 1946. The battery disclosed in this application is, except for the transfer mechanism, substantially identical with the Oliver-Morton diffuser.

Actually, the Oliver-Morton diffuser is made under license under Morton application, Serial No. 34,540 (Morton file wrapper and contents, Exhibit 2 to Morton deposition). This application was filed June 22, 1948 and

the Oath thereof was executed May 11, 1948 and covers the specific transfer mechanism used in the alleged infringing structure.

As testified by Mr. McGuire under direct examination (Tr. 163), Morton's license agreement with Oliver was made on October 23, 1947 and the original transfer mechanism for the Morton unit was built in 1947. A complete battery was built, installed and successfully operated during the 1948 Sugar Beet Campaign at Woodland, California (Tr. 164).

THE COMMERCIAL SUCCESS OF THE MACHINE SHOWN IN THE PATENTS IS UNIMPRESSIVE IN THIS RECORD AND EVEN IF THE CONTRARY WERE TRUE COMMERCIAL SUCCESS CANNOT BE SUBSTITUTED FOR INVENTION.

The District Court was evidently extremely impressed by the so-called commercial success of the Silver batteries, and we believe was misled thereby into attributing this to patentable invention. We do not interpret the record to show that the commercial success was impressive for the following reasons:

Silver in his testimony (Tr. 48) testified that he built his first machine in 1942, and between the years of 1942 and 1948 he manufactured and sold fourteen (Tr. 51) of the type of machines shown in the patents in suit. Then Mr. Silver, to overcome difficulties in the operation of the patented type of machine, switched to a horizontal type (Tr. 52), also called the scroll or Chinook type. As a matter of fact, difficulties of the patented type must have been quite fundamental because at Tr. 53 Mr. Silver

testified that the Utah-Idaho Sugar Company, which had had on order a chain (patented) type of diffuser, requested that Silver construct the scroll type instead, which he did. Also, Mr. Silver built two machines for the Spreckels Sugar Company, which were identical to the Morton battery, at the specific instructions of the Spreckels Sugar Company, instead of two chain type which they had on order (Tr. 74 and 77). Those Morton machines built by Silver for Spreckels Sugar Company *were precisely copied from the accused Morton battery* (Silver deposition, Tr. 273) previously built by Oliver and installed for tests with the Spreckels Sugar Company. The reason for this is obvious because the Morton type was much less expensive to build, by almost 33⅓ per cent, than the type shown in Silver's patents, and it also had a greater flexibility.

Silver's testimony on this point under cross-examination was as follows:

> "Q. Did you tell Mr. Gray or not at that time that the chain type presented so many mechanical difficulties and that the upkeep for repairs was so high that you were not going to build another chain type machine? A. I made a *statement* to the effect that the new scroll type machine which I had built for Chinook, when it was perfected, was such that I could see no reason for building any more chain type machines. (Tr. 100).
>
> Q. Why is it then that you haven't sold one for two years? A. Because, I have a machine which I consider an improvement?
>
> Q. And you sold one of those in the two years? A. I sold two of them—sold three, two now installed, and one sold, one of them ordered, I should say.

Q. Would you consider that horizontal machine a far superior machine to the chain type? A. I consider it a superior machine." (Tr. 101).

Mr. Silver further testified under cross-examination concerning the advantage of the horizontal type or scroll type diffuser as follows:

"Q. And isn't it a fact that the horizontal type or scroll type is considerably less expensive to build than the chain type? A. Somewhat less.

Q. Say about thirty per cent less? A. I would say no, not that much less, in my Chinook machine.

Q. What about the Morton type that you built? A. It is somewhat less expensive than either of the other two types.

Q. And would you say the Morton type was approximately thirty to thirty-three and one-third per cent less expensive to build than the chain type, equal number of cells? A. Approximately.

Q. Now, the Morton type also has a flexibility that the chain type doesn't have, doesn't it? A. That is correct.

Q. And they can be rearranged in many ways that you can't arrange the chain type because that is a fixed integral structure? A. The specific chain type which was previously built, that is *true.*" (Tr. 101).

Therefore, the fourteen machines built during those years and the stoppage of building them two years prior to this trial does not impress us as a weighty showing of commercial success, particularly when there is considered the great number of sugar refineries in the United States. The number of such refineries can be gauged somewhat from Mr. Shafor's testimony that during the

years 1917 and 1929, when he worked for the Great Western Sugar Company, that company alone had twenty-two plants (Tr. 182), and that he personally visited at least seventy or eighty refineries. Therefore, it is evident that the fourteen diffusers of the patented type during the last ten years has replaced but a small percentage of prior diffusers in sugar refineries in the United States. The success of this patented type of machine is certainly diminished by the fact that the Spreckels Sugar Company and the Utah-Idaho Sugar Company, although having on order the patented type of machines, requested that they not be built and that a horizontal type be substituted. In the case of the Spreckels Sugar Company, they insisted that a copy of the horizontal accused Morton battery be substituted, and pursuant thereto, Silver copied the Morton battery and duplicated it in two machines for that company (Tr. 273).

QUESTIONS PRESENTED.

In light of above facts, the following questions are presented:

(1) Whether the claims of each of the Silver patents are valid and infringed.

(2) Whether a claim abandoned and cancelled may be read back into a patent grant.

(3) Whether unambiguous process and machine claims may be enlarged by incorporating therein, upon the doctrine of equivalents, processes and machines covered by prior art patents and stated by the patentee during the

prosecution of his application to be ineffective and inoperative.

(4) Whether a process which is the inherent function of the apparatus in which it is carried out can be the subject of a valid patent.

(5) Whether the monopoly of a patent may be measured by reference to the specification of the patent, the testimony of the inventor and alleged commercial success rather than by reference to the claims of the patent.

(6) Whether the process and apparatus claims of the Silver patents are anticipated by the prior art if construed with sufficient breadth to cover petitioner's process and apparatus.

(7) Whether prior art can be disregarded for the reason that it has never been put into commercial practice.

(8) Whether the monopoly accorded to an inventor by one patent can be extended validly by the subsequent issuance to the same inventor of a second patent containing claims covering substantially the same subject matter covered in the claims of the first patent.

(9) Whether the claims of a patent can be held to cover apparatus not disclosed in said patent as under the statute and concededly not designed or developed by him until a much later date.

REASONS RELIED ON FOR ALLOWANCE OF WRIT.

The reasons relied on for the issuance of the writ prayed for are:

1. The possibility of conflict between Circuits is remote despite the doubtful validity of the patents in suit for:

A continuous diffusion battery of the type under discussion costs about $250,000.00 (Tr. 72), and its shutdown during a sugar beet campaign by reason of an injunction would represent an enormous loss. These two factors would constitute a contingent liability which no one could well afford to assume. Silver has no competition in the field of continuous sugar beet diffusion and accordingly the possibility of any further litigation of these patents is remote. This alone warrants review by this Court for the reasons pointed out by *Mackay Radio & Telegraph Co. v. Radio Corporation of America* (1939), 306 U.S. 86, 89; *Muncie Gear Works, Inc. v. Outboard Marine & Manufacturing Co.* (1942), 315 U.S. 759, 765-6; *Exhibit Supply Co. v. Ace Patents Corporation* (1942), 315 U.S. 126, 128; *Schriber-Schroth Co. v. Cleveland Trust Co.* (1938), 305 U.S. 47, 50.

2. Important questions of patent law have been decided in a manner in conflict of the decisions of this Court. Thus:

(a) In sustaining the process and apparatus claims of the Silver patents, the Court below regranted to Silver the claims originally submitted by him but which were subsequently cancelled and abandoned. This is not in accord with this Court's decision in *Schriber-Schroth Co. v. Cleveland Trust Co.* (1940), 311 U.S. 211, 218, 220-2; *Altoona Publix Theatres Inc. v. American Tri-Ergon*

Corp. (1935), 294 U.S. 477, 487, 492; *Sutter v. Robinson* (1886), 119 U.S. 530, 541.

(b) To impart novelty to Silver's process and apparatus claims, the Court below reached to the specifications. As this Court's cases since *White v. Dunbar* (1886), 119 U.S. 47, 51-2, and *McClain v. Ortmayer* (1891), 141 U.S. 419, 423-4 show, the claims measure the grant and, while they may be limited, they may not be enlarged by the specifications.

(c) The Court below disregarded the rule that whatever infringes, if later, will anticipate if earlier. *Knapp v. Morss* (1893), 150 U.S. 221, 228. If Silver's process and apparatus claims can be stretched to cover the Oliver-Morton diffuser and process, they are anticipated by Krauss, Turrentine and other prior art of record.

(d) The Court below in effect granted a patent on a result. *Holland Furniture Company v. Perkins Glue Company* (1928), 277 U.S. 245, 256-8; *General Electric Co. v. Wabash Appliance Corp.* (1938), 304 U.S. 364, 368, 371, 374. The process and product claims as interpreted by the Court below would bar anyone from using in the old Krauss and Turrentine diffuser and process any means whether heretofore known or not which performs the function of transferring the cossettes from one cell to another and in causing them to travel through a cell in admixture with juice. This would seem to be in clear defiance of *Halliburton Oil Well Cementing Co. v. Walker* (1946), 329 U.S. 1, 9-10, 12.

(e) The Court below, in determining that Silver's diffusion battery constituted a new and patentable com-

bination, entirely disregarded the law of exhausted combinations as enunciated by the Supreme Court in *Bassick Mfg. Co. v. R. M. Hollingshead Co.,* 56 S. Ct. 787, and in effect establishes the rule that if an assemblage of old elements produces a better result, such assemblage is patentable regardless of whether it constitutes an exhausted combination.

(f) The Court below, in according Silver's claims an unwarranted range of equivalents and so stretching them as to cover the Oliver-Morton diffuser and process, has left members of the public without a yardstick to determine what it can and cannot do and has disregarded the rule that it is the claims of a patent which measures the monopoly accorded by the grant. *McClain v. Ortmayer* above cited. Members of the public, being without a yardstick to determine the metes and bounds of Silver's monopoly, have little or no inclination to attempt to develop improvements to continuous countercurrent concurrent diffusing apparatus and processes and thus the very purpose of the constitutional enabling act forming the basis of our patent laws will be defeated in this very important industry.

(g) The Court below, in according to Silver's claims a range of equivalents, disregarded the statutory requirement that the specification of a patent shall contain a written description of the invention, and the manner and process of making and using it, in such full, clear, concise, and exact terms, as to enable any person skilled in the art to which it pertains, or which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying

out his invention. 35 U.S.C. 112. Here Silver, by his own admission, did not design and develop a horizontal scroll type of diffuser until the latter part of 1947, years after the filing dates of his applications.

CONCLUSION.

Under the judgment in review, domination of large segments of the useful art important to the sugar industry, much of which, by law is public property, has been handed over to respondent. Before any such conveyance is sealed, this Court should examine the justice of the grant.

Consequently this writ should issue.

Dated, San Francisco, California,
October 12, 1953.

Respectfully submitted,
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(Appendices Follow.)